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C02F 3/00**(21)Application number : **07-094113**(71)Applicant : **YUUTOKU:KK**(22)Date of filing : **16.03.1995**(72)Inventor : **EGASHIRA TAKAHARU****(54) METHOD OF PROLIFERATING COLONY OF USEFUL MICROORGANISM ON POROUS SUBSTANCE**

(57)Abstract:

PURPOSE: To enable microorganisms to proliferate on a porous material so that they may be promptly and persistently utilized by removing moisture and various germs inside by heating and drying the porous material, dipping the material in a plant dry-distillate and an EM bacteria solution sequentially, and natural-drying to remove excessive moisture.

CONSTITUTION: A porous material such as zeolite, charcoal, blast furnace slag or coal ash is heated over 100° to dryness to remove the moisture and various germs inside. When the generation of water vapor stops, the porous material is dipped in a plant dry-distillate containing pyroligneous acid or sap. When it includes the dry-distillate in an amount of more than 50% of its moisture absorption capacity, the porous material is taken out, drained, and soaked in the EM bacteria solution. The solution is warmed up to the temperature for which the EM bacteria actively grow and continued over 48 hours so that they may sufficiently proliferate. Then, the porous material is taken out to remove the excessive moisture and, further beneficial microorganisms are efficiently proliferated on the porous material so that they may be utilized in waste water treatment, environmental clean-up, soil conditioning, putrefaction prevention and refuse disposal.

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(54) 【発明の名称】 多孔質物質に有用微生物群を増殖する方法

(57) 【要約】

【目的】 本発明は多孔質物質の水分や有害雑菌を排除した後、有用微生物のエサとなる植物乾留抽出物を浸着させることにより、有用微生物を住みやすくし、活性化及び増殖を促進して、各用途に対する速効性、持続性の性能を向上させ、その用途を拡大することを目的とする。

【構成】 多孔質物質を加熱乾燥後、植物乾留抽出液に浸漬し、次にEM液に浸漬したものを自然乾燥して余分の水分を除去すること、並びにEM液と植物乾留抽出液を混合させ、有用微生物群を増殖させたものに多孔質物質を浸漬したものを用途に応じて型に成型することを特徴とする。

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【特許請求の範囲】

【請求項1】 多孔質物質を加熱乾燥させて、内部の水分や雑菌を除去後、植物乾留抽出液に浸漬させ、次にEM液に浸漬させ、その後自然乾燥させて、余分の水分を除去することを特徴とする有用微生物群の増殖方法。

【請求項2】 植物乾留抽出液とEM液を適量ずつ混合させ、微生物が活性する適温に一定期間以上放置して、有用微生物群を増殖する方法。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 この発明は有用微生物群を活性、増殖した多孔質物質を廃水処理、土壌改良、環境浄化、腐敗防止、ごみ処理、植物活性等に対して速効的、持続的に性能を向上して利用するための有用微生物群の増殖方法である。

【0002】

【従来の技術】 従来においては、各物体を単体で利用するか、多孔質物質に植物乾留抽出液又はEM液かの、どちらか一種類のみを浸着させている。

【0003】

【発明が解決しようとする課題】 各物体を単体か、一種類のみの浸着によって利用しているので、その用途が限定され、速効性や持続性に欠けていた。又植物乾留抽出液のみを浸着させたものは有害な雑菌が侵入して増殖することがあり、EM液のみを浸着させたものは多孔質物質の内部にエサがないので、有用微生物の活性、増殖能力が低い欠点があった。本発明は以上の欠点を解決し、効果の速効性能、持続性能の向上及び用途の拡大を可能にすることを目的としている。

【0004】

【課題を解決するための手段】 多孔質物質を内部に存在する雑菌を死滅させるためと、水分を除去するために加熱乾燥させる。有害微生物が死滅し、水分がなくなったら植物乾留抽出液の中に浸漬する。植物乾留抽出液が多孔質物質に吸収されたら、水切後EM液に浸漬する。EM液の中に生息しているEM菌は有害雑菌が存在しない多孔質物質の内部を住家とし、植物乾留抽出液をエサとして活性化し増殖する。並びにEM液と植物乾留抽出液を混合させ、有用微生物を増殖させたものに多孔質物質を浸漬したものを用途に応じて型に成型することを特徴とする。

【0005】

【作用】 水分を排除した多孔質物質を植物乾留抽出液の中に浸漬するので浸着量が増加して有用微生物群のエサが多くなる。又EM液に浸漬する前に有害雑菌は死滅しているためEM菌のみが活性化して増殖する。

【0006】

【実施例1】

第1工程

ゼオライト、木炭、高炉スラグ、石炭灰等よりなる多孔

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質物質を雑菌等が死滅する100℃以上の温度に加熱する。

第2工程

多孔質物質からの水蒸気の発生がなくなったら木酢液、樹液等よりなる植物乾留抽出液に浸漬する。

第3工程

多孔質物質の水分吸収可能容量である、多孔質物質の容積の50%以上の植物乾留抽出液を吸収したら取出し、水切をした後EM液の中に浸漬する。

10 第4工程

EM液の温度をEM菌の活性、増殖に適する25、26、27、28、29、30、31、32、33、34、35℃の温度の範囲に保持して放置する。

第5工程

EM菌を十分に増殖させるために48時間以上放置した後に取出して余分な水分を切って最終製品を得る。

【実施例2】第1工程

高吸水性樹脂等よりなる多孔質物質を木酢液、樹液等よりなる植物乾留抽出液の中に浸漬する。

20 第2工程

多孔質物質の吸水能力である重量の800倍以上の植物乾留抽出液を吸収したら取出して、EM液の中に浸漬する。

第3工程

EM液の温度をEM菌の活性、増殖に適する25、26、27、28、29、30、31、32、33、34、35℃の範囲の温度に保持して放置する。

第4工程

EM菌を十分に増殖させるために48時間以上放置した後に取出して余分な水分を切って最終製品を得る。

30 第1工程

石膏製品、粘度製品等よりなる多孔質物質を雑菌等が死滅する100℃以上の温度に加熱する。

第2工程

多孔質物質からの水蒸気の発生がなくなったら木酢液、樹液等よりなる植物乾留抽出液の中に浸漬する。

第3工程

多孔質物質の水分吸収可能容量である、多孔質物質の30%以上の植物乾留抽出液を吸収したら取出してEM液の中に浸漬する。

40 第4工程

EM液の温度をEM菌の活性、増殖に適する25、26、27、28、29、30、31、32、33、34、35℃の温度の範囲に保持して放置する。

第5工程

EM菌を十分に増殖させるために48時間以上放置した後に取出して余分な水分を切って最終製品を得る。

【実施例4】第1工程

EM液と木酢液、樹液等よりなる植物乾留抽出液を適量ずつ混合する。

第2工程

混合液をEM菌の活性、増殖に適する25、26、27、28、29、30、31、32、33、34、35℃の温度の範囲に保持して、EM菌を十分に増殖させるために48時間以上放置する。

第3工程

高吸水性樹脂等よりなる多孔質物質を混合液に浸漬する。

第4工程

多孔質物質の吸水能力である重量の800倍以上の混合液を吸収したら取出して最終製品を得る。

【実施例5】第1工程

EM液と木酢液、樹液等よりなる植物乾留抽出液を適量ずつ混合する。

第2工程

混合液の温度をEM液の活性、増殖に適する25、26、27、28、29、30、31、32、33、34、35℃の範囲に保持して、EM菌を十分に増殖させるために48時間以上放置する。

第3工程

石膏原料等よりなる多孔質物質を混合液の中に、少しずつ散布する様にして入れながら攪拌する。混合液分がなくなり粘りがでる様になったら多孔質物質を入れるのを止めて、さらに3分間位ゆっくり攪拌する。

第4工程

粘りが増加したら、用途に応じた型の内部に離型剤を塗ったものの中に空気が入らない様に少しずつ流し込む。

第5工程

型の温度が最高発熱となって硬化が終了したら脱型した後、自然乾燥させて最終製品を得る。

【0007】

【発明の効果】多孔質物質は微生物のよい住家となるが、有害な雑菌も住むことになるので、この有害雑菌を排除して有用微生物のエサとなる植物乾留抽出液を多量に浸着させることによって、EM液中に生息している有用微生物群を多孔質物質の内部で活性化させ、増殖化させることが出来る。このことにより、各用途に対して速効性、持続性の性能が向上し、その用途も拡大する。

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CLAIMS

[Claim(s)]

[Claim 1] The growth approach of the effective microorganisms which are made to carry out stoving of the porosity matter, and are characterized by making it dip in a vegetable dry distillation extract after removing internal moisture and saprophytic bacteria, making it dip in EM liquid next, making it season naturally after that, and removing excessive moisture.

[Claim 2] How to mix a vegetable dry distillation extract and EM liquid optimum dose every, to leave it beyond a fixed period in the optimal temperature in which a microorganism carries out activity, and to increase effective microorganisms.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention is the growth approach of the effective microorganisms for it improving [effective microorganisms] the engine performance fast-acting-wise and continuously to waste water treatment, soil amelioration, environmental purification, putrefaction prevention, refuse disposal, vegetable activity, etc. in the increased porosity matter, and using to activity.

[0002]

[Description of the Prior Art] In the former, ** arrival of either [one kind of] a vegetable dry distillation extract or EM liquid is carried out to whether each body is used alone and the porosity matter.

[0003]

[Problem(s) to be Solved by the Invention] Since each body was used by the simple substance and one kind of ** arrival, the application was limited and quick action and durability were missing. Moreover, since that to which harmful saprophytic bacteria may invade and increase that to which ** arrival only of the vegetable dry distillation extract was carried out, and ** arrival only of the EM liquid was carried out did not have food in the interior of the porosity matter, there was a fault with low activity of a useful microorganism and proliferation potential force. This invention solves the above fault and it aims at enabling improvement in the fast-acting engine performance of effectiveness, and durability ability, and expansion of an application.

[0004]

[Means for Solving the Problem] Stoving is carried out in order to annihilate the saprophytic bacteria which exist the porosity matter in the interior, and to remove moisture. A harmful microorganism becomes extinct, and if moisture is lost, it will dip into a vegetable dry distillation extract. If a vegetable dry distillation extract is absorbed by the porosity matter, it will dip in after [a water break] EM liquid. EM bacillus which lives into EM liquid uses as an abode the interior of the porosity matter with which harmful saprophytic bacteria do not exist, activates a vegetable dry distillation extract as food, and increases it. A list is made to mix EM liquid and a vegetable dry distillation extract, and it is characterized by casting in a mold what dipped the porosity matter in what proliferated the useful microorganism according to an application.

[0005]

[Function] Since the porosity matter which eliminated moisture is dipped into a vegetable dry distillation extract, ***** increases and the food of effective microorganisms increases in number. Moreover, before dipping in EM liquid, since harmful saprophytic bacteria have become extinct, only EM bacillus is activated and they are increased.

[0006]

[Example 1]

The porosity matter which consists of the 1st process zeolite, charcoal, a blast furnace slag, coal ash, etc. is heated in temperature of 100 degrees C or more to which saprophytic bacteria etc. become extinct.

If generating of the steam from the 2nd process porosity matter is lost, it will dip in the vegetable dry distillation extract which consists of pyrolignous acid, sap, etc.

If 50% or more of vegetable dry distillation extract of the volume of the porosity matter which is the water absorption possible capacity of the 3rd process porosity matter is absorbed, after carrying out drawing and a water break, it dips into EM liquid.

The temperature of 4th process EM liquid is held and left in the range of temperature (25, 26, 27, 28, 29, 30, 31, 32 and 33 suitable for the activity of EM bacillus, and growth, and 34 or 35 degrees C).

It takes out, after leaving it for 48 hours or more in order to fully proliferate a 5th process EM bacillus, and excessive moisture is cut, and a final product is obtained.

[Example 2] The porosity matter which consists of the 1st process water-absorbing resin etc. is dipped into the vegetable dry distillation extract which consists of pyrolignous acid, sap, etc.

It will take out, if the vegetable dry distillation extract of 800 times or more of the weight which is the water-absorption-power force of the 2nd process porosity matter is absorbed, and it dips into EM liquid.

The temperature of 3rd process EM liquid is held and left to the temperature of the range of 25, 26, 27, 28, 29, 30, 31, 32 and 33 suitable for the activity of EM bacillus, and growth, and 34 or 35 degrees C.

It takes out, after leaving it for 48 hours or more in order to fully proliferate a 4th process EM bacillus, and excessive moisture is cut, and a final product is obtained.

[Example 3] The porosity matter which consists of a 1st process gypsum-fibrosus product, a viscosity product, etc. is heated in temperature of 100 degrees C or more to which saprophytic bacteria etc. become extinct.

If generating of the steam from the 2nd process porosity matter is lost, it will dip into the vegetable dry distillation extract which consists of pyrolignous acid, sap, etc.

It will take out, if 30% or more of vegetable dry distillation extract of the porosity matter which is the water absorption possible capacity of the 3rd process porosity matter is absorbed, and it dips into EM liquid.

The temperature of 4th process EM liquid is held and left in the range of temperature (25, 26, 27, 28, 29, 30, 31, 32 and 33 suitable for the activity of EM bacillus, and growth, and 34 or 35 degrees C).

It takes out, after leaving it for 48 hours or more in order to fully proliferate a 5th process EM bacillus, and excessive moisture is cut, and a final product is obtained.

[Example 4] The vegetable dry distillation extract which consists of 1st process EM liquid, pyrolignous acid, sap, etc. is mixed optimum dose every.

The 2nd process mixed liquor is held in the range of temperature (25, 26, 27, 28, 29, 30, 31, 32 and 33 suitable for the activity of EM bacillus, and growth, and 34 or 35 degrees C), and it is left for 48 hours or more in order to fully proliferate EM bacillus.

The porosity matter which consists of the 3rd process water-absorbing resin etc. is dipped in mixed liquor.

It will take out, if the mixed liquor of 800 times or more of the weight which is the water-absorption-power force of the 4th process porosity matter is absorbed, and a final product is obtained.

[Example 5] The vegetable dry distillation extract which consists of 1st process EM liquid, pyrolignous acid, sap, etc. is mixed optimum dose every.

The temperature of the 2nd process mixed liquor is held in 25, 26, 27, 28, 29, 30, 31, 32 and 33 suitable for the activity of EM liquid, and growth, and the range of 34 or 35 degrees C, and it is left for 48 hours or more in order to fully proliferate EM bacillus.

It stirs putting it in into mixed liquor, as the porosity matter which consists of a 3rd process gypsum-fibrosus raw material etc. is sprinkled little by little. If it is lost by the amount of mixed liquor and stickiness comes to come out, it will stop putting in the porosity matter, and for 3 more minutes is stirred slowly.

If the 4th process stickiness increases, although the release agent was applied to the interior of the mold according to an application, it will slush into the appearance by which air does not go into inside little by little.

If the temperature of the 5th process mold serves as the highest generation of heat and hardening is completed, after unmolding, it is made to season naturally and a final product is obtained.

[0007]

[Effect of the Invention] Since harmful saprophytic bacteria will also live, you can make it activated inside the porosity matter, and the effective microorganisms which live into EM liquid can be made to growth-ize by carrying out ** arrival of the vegetable dry distillation extract which eliminates these harmful saprophytic bacteria and serves as food of a useful microorganism so much, although the porosity matter serves as a good abode of a microorganism. By this, the engine performance of quick action and durability improves to each application, and that application is also expanded.

[Translation done.]